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<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/005,247	HAYAMI ET AL.	
	Examiner	Art Unit	
	Jean B Jeanglaude	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 12-07-01.
2.  The allowed claim(s) is/are 1-44.
3.  The drawings filed on 12-07-04 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
 of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 04/27;1/21;8/26 (Q-7-a)
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

  
 Jean Bruner Jeanglaude  
 Primary Examiner

#### Reasons For Allowance

Claims 1 – 44 are allowable.

1. The following is an examiner's statement of reasons for allowance: in combination with other limitations of the claims the prior arts made of record fail to suggest a modulation apparatus and method [an apparatus and method for recording auxiliary information] that comprise a means for sequentially connecting a generated output code words into a sequence which follows run length limiting rules and means for changing the run length limiting rules between RLL (1, 7) and RLL (1,8) in response to auxiliary information to superimpose the auxiliary information on the sequence of the generated output code words. Also, in combination with other limitations of the claims the prior arts made of record fail to suggest a modulation apparatus that comprises a means for selecting one from a first and second candidate current output code words which corresponds to a smaller DSV absolute value as a final current output code word and means for changing a run length limiting rule to change a maximum run length in a sequence of final output code words in response to auxiliary information to superimpose the auxiliary information on the sequence of the final output code words. Furthermore, in combination with other limitations of the claims the prior arts made of record fail to suggest a demodulation apparatus that comprises a means for demodulating a code word of interest into an original code word by referring to a decoding table in response to a generated encoding state information; means for detecting a frequency of occurrence of a specified run length in sequence of code words and means for

reproducing auxiliary information from the sequence of code words in response to the detected occurrence frequency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
3. Hayami (US patent Number 6,573,848) discloses a modulation system using encoding tables and method therefor.
4. Hayami (US Patent Number 6,690,308) discloses a computer program for implementing a modulation method and a demodulation method therefor.
5. Chen et al. (US Patent Number 6,778,104) discloses a method and apparatus for performing DSV protection in an EFM/EFM+ encoding same.
6. Hayami (US Application Number 09/989,395) discloses a modulation system.
7. Hayami (US Application Number 10/060,337) discloses a modulation system.
8. Hayami (US Application Number 10/355,115) discloses a method and apparatus for modulating and demodulating digital data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B Jeanglaude whose telephone number is 571-

272-1804. The examiner can normally be reached on Monday - Friday 7:30 A. M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jean Bruner Jeanglaude  
Primary Examiner  
September 14, 2004